



Policy 1:

Establish an electricity consumption baseline and develop a plan with the goal to reduce per-square foot electricity consumption of the city/town/county buildings by 15% within 5 years of adoption.

INTRODUCTION

Maryland has adopted an aggressive goal for reducing per capita energy consumption by 15% by 2015. Reducing energy usage lowers greenhouse gas emissions and saves residents money.

GOAL

Becoming a Maryland Smart Energy Community requires that a local government (city, town, or county) sets the goal of reducing per-square foot electricity consumption of government buildings by 15% within 5 years.

DELIVERABLES

By applying to become a Maryland Smart Energy Community, the local government agrees to the following, to be completed by December 31, 2013:

- (1) **Develop an initial estimate of total local government building electricity consumption for a baseline year.** This baseline electricity consumption must include all divisions and departments of the local government including all municipal buildings, drinking water and wastewater treatment plants, and pumping stations owned by the local government. If you are also pursuing Policy 2, please use the same electricity consumption baseline.
 - The baseline year should consist of the most recent year of complete data. For applications in the spring of 2013, this should be 2012. However, to allow communities to take credit for energy efficiency measures completed in recent years, a local government may provide a baseline that goes back as far as 2010, and provide a reduction plan that begins 2011. Already-completed measures should be documented as described in Section IV B 5, below.
 - The electricity use baseline should be provided on a MWh (megawatt-hour) or kWh (kilowatt-hour) basis. Please be sure to specify your units. 1000 kWh = 1 MWh. Gross floor area should also be provided to determine an electricity use per square foot calculation. Measuring electricity use per square foot allows for new buildings to come online that will contribute positively to the per-square foot reduction goal.
 - MEA recommends entering building data into ENERGY STAR Portfolio Manager to establish the electricity baseline inventory. A variety of tools and methods are acceptable, but must be approved by MEA. If a local government owns a very large number of buildings, they may work directly with MEA to define an appropriate way to benchmark and plan for electricity reductions on the most relevant subset of their buildings.

- If you choose to use Portfolio Manager, completing the baseline inventory requires the following information about each building:
 - Building street address
 - Year built
 - Gross floor area
 - Key operating characteristics for each major space type (details found on the Portfolio Manager website)
 - 12 consecutive months of electricity bills. If you don't have this information readily available, contact your electric utility provider, as most will be able to easily supply this historical information.

- (2) **Pass a policy committing the local government to reducing the electricity use baseline by 15% within the 5 year period following the Baseline Year.**
- (3) **Put in place a comprehensive program designed to reduce the electricity use baseline by 15% within the 5 year period following the Baseline Year.** For example, applicants using a Calendar Year 2010 baseline must reduce their total energy use by 15% by the end of 2015. Please note that the 5 year time period begins the year following the baseline year, not the year following designation as a Smart Energy Community. The 15% reduction is applied to the aggregate electricity use (in MWh or kWh).

Create an Energy Reduction Plan (ERP) to document both the baseline electricity consumption and the comprehensive program to reduce total electricity use by 15%. An ERP is a document that requires thoughtful planning and participation by all municipal departments. A team of individuals and a designated lead responsible for conducting the baseline inventory and developing the ERP should be identified. The process will involve collecting data using ENERGY STAR Portfolio Manager or equivalent, analyzing the data to understand where reductions can be achieved, setting goals and developing strategies based on data collection and analysis, and finally developing and writing the ERP. MEA will be available to provide support for local governments as they conduct the baseline inventory and develop the ERP.

A well-prepared ERP will provide a realistic path for implementation of energy-saving improvements. MEA encourages local governments to think creatively about how they will reach the 15% savings goal. The benefits of ERP implementation include long-term savings in annual electricity costs and reductions in a local government's greenhouse gas emissions. It also presents an opportunity to perpetuate these benefits if a portion of the cost savings is re-invested in further energy efficiency. Finally, the ERP is an opportunity to engage the community in municipal energy reduction, both in its design and implementation and in publicizing its successes.

ANNUAL REPORTING

The local government will submit annual reports to MEA documenting the progress made during that year. Participants must show that they are making a good-faith effort to achieve the electricity consumption reduction goal. Local governments who earn the Smart Energy Community designation and are up-to-date on their annual reporting may be eligible for grant funding in future years.

PROGRAM SUPPORT

The Maryland Energy Administration will provide technical assistance to all participating local governments to help with (1) developing an initial estimate of total local government building electricity consumption for a baseline year, (2) developing and passing the proper policies/ordinances to commit to a 15% reduction in local government electricity consumption within 5 years, and (3) developing a plan to reduce electricity consumption. Participants may also use 20%,

or a maximum of \$30,000, of their grant award to pay for the administrative costs related to passing this and/or the other required policies.

FOR MORE INFORMATION

MEA and the University of Maryland Environmental Finance Center are available to provide further information and technical assistance to communities, as requested.

Website: <http://energy.maryland.gov/Govt/smartenergycommunities/>

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INSTRUCTIONS FOR CREATING AN ENERGY REDUCTION PLAN

A comprehensive ERP consists of a number of key components which enables a local government to establish energy reduction goals and develop a structure to meet those goals over a specific period of time. The outline below presents the format for the ERP and addresses its key components. *The information contained in the outline below is the **minimum** information that a local government is expected to provide in its ERP.* Please use the sample tables/spreadsheets provided or equivalent tables/spreadsheets generated in Portfolio Manager. Note that it is important to also provide a brief supporting narrative.

MEA will provide support for participants as they develop the ERP, including webinars, in-person trainings, and on-site technical assistance, as resources permit.

This policy also references two spreadsheets, labeled “Energy Use Baseline” and “Planned Energy Conservation Projects” Excel spreadsheets, available for download at <http://energy.maryland.gov/Govt/smartenergycommunities>.

Why Does MEA Want This Level of Detail?

This information will be used by MEA to:

- Confirm that a local government has a well thought-out and documented pathway to fulfill their commitment to reduce their energy consumption by 15% in five years.
- Ensure that all Smart Energy Communities have met similar criteria in order to be designated.
- Measure progress toward the [EmPOWER Maryland goal](#), including energy reduction and energy cost savings.

ENERGY REDUCTION PLAN OUTLINE

I. LETTERS FROM THE LOCAL GOVERNMENT VERIFYING ADOPTION OF THE ERP

- The LOCAL government must provide a letter from the Chief Executive Officer of the city or town stating that it has adopted the Energy Reduction Plan. The Chief Executive Officer is defined as the city/town manager, the Mayor, the County Executive, the County Commissioners, or equivalent.
- Include a copy of the enabling legislation or policy.

II. EXECUTIVE SUMMARY

A. Narrative Summary of the Town - including population, Energy Star[®] ratings (from Portfolio Manager, if applicable), EPA Community Energy Challenge participant, DHCD Sustainable Communities participant, Sustainable Maryland participant, etc.

- **Summary of Municipal Energy Uses** - use instructions below to create Table 1 (sample below).
Total Number of Local Government Buildings - broken down by type of heating fuel (e.g. electric, oil, propane, natural gas, etc.). This program focuses on reducing electricity consumption, but there may be opportunities in the future to reduce other fuel types as well.
- **Water and Sewer** – note the number of drinking and wastewater treatment plants and pumping stations owned by the local government.

Table 1: Summary of Municipal Energy Users (Sample Data)

| | Number |
|--|--------|
| Buildings | |
| Electric Heat | 8 |
| Oil Heat | 5 |
| Natural Gas Heat | 0 |
| Propane Heat | 4 |
| Biomass Heat | 0 |
| Other Heat Type | 0 |
| Buildings Planned for Addition in Next 5 Years | 1 |
| Buildings the City Plans to Relinquish in Next 5 Years | 0 |
| Water and Sewer | |
| Drinking Water Treatment Plant | 1 |
| Wastewater Treatment Plant | 0 |
| Pumping Stations | 10 |

B. Summary of Energy Use Baseline and Plans for Reductions – use sample Table 2 provided below. This should be a summary, consistent with the data in the “Energy Use Baseline” and “Planned Energy Conservation Projects” Excel spreadsheets (download at <http://energy.maryland.gov/Govt/smartenergycommunities>)

Table 2: Summary of Municipal Energy Use Baseline

| BASELINE YEAR — | MWh Used in Baseline Year | % of Total MWh Baseline Electricity Consumption | Gross Square Footage (Baseline) | Projected Planned MWh Savings | Savings as % of Total MWh Baseline Electricity Consumption | Gross Square Footage (Projected for Year 5) |
|-------------------------|---------------------------------|--|---------------------------------------|--|--|--|
| Buildings | | | | | | |
| Water/Sewer/ Pumping | | | | | | |
| Total | | 100% | | | 15% | |

III. ENERGY USE BASELINE INVENTORY

A. Identification of the Baseline Year

B. Local Government Energy Consumption for the Baseline Year

How much electricity did your local government buildings use in the baseline year? MEA recommends using ENERGY STAR Portfolio Manager to create a baseline inventory and track the ongoing energy consumption. If you choose not to use Portfolio Manager, provide a description of how you determined the baseline, as well as all relevant data and calculations.

For all buildings:

- Using the separately-provided Excel spreadsheet called “Energy Use Baseline,” provide the annual MWh consumption. Include building size (gross square feet) and a calculation of electricity consumption intensity (MWh/SF). The Excel spreadsheet can be found at <http://energy.maryland.gov/Govt/SmartEnergyCommunities>

Or

- Use ENERGY STAR Portfolio Manager to provide a summary of baseline energy consumption, in MWh. Include building size (gross square feet) and a calculation of electricity consumption intensity (MWh/SF)

IV. ELECTRICITY REDUCTION PLAN

A. Narrative Summary –

1. *Overview of Goals for Years 1-3*
2. *Overview of Goals for Years 4-5*
3. *Identify Areas of Least Efficiency/Greatest Waste*

B. Getting to a 15% Electricity Use Reduction Within the 5 Year Period Following the Baseline Year - This section should include electricity reductions anticipated from all divisions and departments including: all local government buildings, drinking water and wastewater treatment plants, and pumping stations owned by the local government.

1. *Program Management Plan for Implementation, Monitoring and Oversight* – Identify the personnel responsible both for oversight of the Electricity Reduction Plan implementation and for implementation of energy conservation measures in specific departments or buildings, if applicable. Also identify personnel responsible for the Annual Reporting requirements.
2. *Summary of Energy Audit(s) or Other Sources for Projected Energy Savings* - Although an energy audit is not a requirement for an ERP, an audit can provide a better understanding of existing conditions and can identify opportunities for electricity reduction. All sources for projected energy savings for individual measures must be identified in the separate “Planned Energy Conservation Projects” Excel spreadsheet and included as attached audits or calculations. Please identify if any energy audits have been completed in the past (as part of the MEA-funded EECBG program or otherwise), and provide the audit report as an attachment.
3. *Electricity Conservation Measures* – In the “Planned Energy Conservation Projects” spreadsheet, list completed and planned electricity conservation measures. **References for each measure must be included in the spreadsheet and these references must be included as appendices to the Electricity Reduction Plan.** Please subtotal projected annual MWh savings for each category: buildings, water and sewer, as well as a municipal total. Refer to the samples in the spreadsheet.

The “Planned Energy Conservation Projects” will be also be used for future Smart Energy Communities reporting if you are designated, including applying for and final reporting on a Green Communities designation grant and for annual reports.

For each measure, provide:

- its status/projected timeline
- the projected electricity savings (MWh)
- the projected cost savings
- the projected total cost
- any utility incentives received
- any planned use of Maryland Smart Energy Communities grant funds, if designated
- for measures requiring additional funding, please list the funding source: capital budget, operating budget, debt and type, or other grants
- the source of the calculated energy and cost savings in the reference column. Audits and/or calculations must be included in the Appendices.

4. *If Creating an ERP Without an Audit* – Local governments can analyze the energy baseline data for the buildings which are least efficient to identify appropriate Energy Conservation Measures based upon knowledge of the building and its equipment. Projected electricity savings may be obtained by requesting information from equipment manufacturers. These calculations must be included in the appendices.

If sources other than an audit are used for projected electricity savings, please provide a brief summary of those sources here and include complete assumptions and calculations in the appendices. MEA recommends that local governments use the [NEEP Technical Resource Manual](http://neep.org/uploads/EMV%20Forum/EMV%20Products/A5_Mid_Atlantic_TRM_V2_FINAL.pdf), found at http://neep.org/uploads/EMV%20Forum/EMV%20Products/A5_Mid_Atlantic_TRM_V2_FINAL.pdf

5. *For Local Governments Taking Credit for Efficiency Measures Occurring Before Smart Energy Communities Designation Application* - (i.e. for local governments using a 2010 baseline). Actual reductions in electricity usage may be applied to the 15% in identified energy savings. For example, a local government with a baseline year of 2010 saw an electricity reduction of 4% in 2011. They would then need to identify an additional 11% in documented energy efficiency measures in the “Planned Energy Conservation Projects” spreadsheet.

In order to claim credit for actual energy reductions, include in the “Planned Energy Conservation Projects” spreadsheet all efficiency measures implemented during the period following the baseline year with estimated energy savings from each measure.

6. *For Local Governments Using a Performance Contract (Energy Management Services)* – If an audit has been performed, a local government may provide the audit report in lieu of the “Planned Energy Conservation Projects” spreadsheet for those measures and buildings/facilities. If less than a 15 percent reduction from the baseline energy use has not been identified, additional measures should be listed using the “Planned Energy Conservation Projects” spreadsheet.

C. Summary of Long-Term Energy Reduction Goals – Beyond 5 years

1. *Local Government Buildings*
2. *Water and Sewer Facilities*
3. *Perpetuating Energy Efficiency* – Has the local government considered an energy conservation savings reinvestment plan (in which some of the energy savings are reinvested into a fund to finance future energy efficiency or renewable efficiency measures)? Or has it identified a mechanism for directing some of the energy cost savings from an annual operating budget to reinvesting in further energy efficiency?
4. *Identifying non-electric savings opportunities*

V. LIST OF RESOURCES

Identify resources that the local government used to create its ERP (websites, documents, tools). Please note that this section cannot be used in place of the Reference "Source for Projected Savings" column in the “Planned Energy Conservation Projects” spreadsheet.

